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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,474	12/23/2003	Masahiko Matsukawa	21581-00312-US	8031

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EXAMINER	
ZHENG, LOIS L	
ART UNIT	**PAPER NUMBER**
1742	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/743,474	MATSUKAWA ET AL.	
	Examiner	Art Unit	
	Lois Zheng	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *4,5 and 7-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 2/27/07
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 26 March 2007 has been entered.

Status of Claims

2. Claims 1-2 are amended in view of applicant's amendment filed 27 February 2007. Claims 4-5 and 7-12 remain withdrawn from consideration. Therefore, claims 1-3 and 6 are currently under examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimann et al. US 2003/0209290 A1(Heimann) in view of Affinito US 6,203,854 B1(Affinito).

Heimann teaches a substantially phosphate free metal surface treatment composition(page 2 paragraph [0014]) comprising about 0 to about 40% water soluble

silicate(paragraph [0034]), and at least one dopant material selected from the group of fluorotitanic acid, fluorozirconic acid, water soluble salts of titanium, zirconium, aluminum, iron, boron (borates), gallium, cobalt, zinc, copper, magnesium, manganese and the mixture thereof, in an amount of about 0.001 to about 5%(paragraph [0038], [0050], claims 1, 3 and 12).

Regarding claims 1-2, the water soluble salts of titanium, zirconium, aluminum, gallium, cobalt, zinc, copper, magnesium, manganese and the mixture thereof read on the claimed components (A)-(D). Even though Heimann does not explicitly teach amount of each of the water soluble salts above, Heimann does teach that these material, functioning as a dopant, can be in an amount of about 0.001 to about 5%. Based on the broadest reasonable interpretation, the examiner interprets that the broadest concentration range for each of the water soluble salts listed above is about 0.001 to about 5%, in accordance with the scope of Heimann. Therefore, each of the water soluble salts containing components (A)-(D) of the instant invention as taught in the treatment solution of Heimann have concentration ranges that overlap the claimed component concentration ranges. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed component concentration ranges from the disclosed ranges of Heimann would have been obvious to one skilled in the art since Heimann teaches the same utilities in its disclosed component concentration ranges.

However, Heimann does not explicitly teach the claimed 1-5000ppm of silane coupling agent.

Affinito teaches an anticorrosion metal surface treatment solution comprising complex fluorides such as titanium fluoride, fluorotitanic acid, fluorozirconic acid, fluorohafnic acid and mixture thereof, used in combination with an aminosilane in an amount of about 0.2wt% to about 3wt%(abstract, col. 3 lines 41-44 and 63-66).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated about 0.2wt% to about 3wt% of aminosilane as taught by Affinito into the coating solution of Heimann since Affinito teaches that solutions comprising both an aminosilane and a fluorine containing compound not only provide good corrosion protection, but also provide good polymer adhesion(col. 2 lines 55-58).

In addition, the amount of aminosilane as taught by Heimann in view of Affinito, which reads on the claimed silane coupling agent, overlap the claimed amount of silane coupling agent. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed silane coupling agent concentration range from the disclosed range of Heimann in view of Affinito would have been obvious to one skilled in the art since Heimann in view of Affinito teach the same utilities in their disclosed silane coupling agent concentration range.

Regarding claims 3 and 6, the water soluble salt such as iron chloride and borates in the treatment solution of Heimann contain iron and borate that read on the claimed at least one accelerators as recited in claims 3 and 6. The concentration ranges of iron and borate as taught by Heimann(i.e. dopant concentration range), based on the broadest reasonable interpretation, also overlap the claimed accelerator concentration range. Therefore, a prima facie case of obviousness exists. See MPEP

2144.05. The selection of claimed iron and borate concentration ranges from the disclosed ranges of Heimann would have been obvious to one skilled in the art since Heimann teaches the same utilities in its disclosed iron and borate concentration ranges.

5. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dolan US 5,449,414(Dolan) in view of Affinito US 6,203,854 B1(Affinito).

Dolan teaches a substantially phosphate free(claim 1) conversion coating composition comprising 5-500mg/m^2 of complex fluoride of Ti, Zr, Hf and Si, and the mixture thereof(abstract, col. 4 line 66 – col. 5 line 25) and cation elements selected from Co, Mg, Mn, Zn, Zr, Fe, Al and/or Cu, wherein the ratio of the cation elements and the complex fluoride is at least 1:3(col. 3 lines 21-29).

Regarding claims 1 and 2, the complex fluorides of Ti, Zr, and Hf as taught by Dolan meet the limitations of claimed at least one of Zr, Ti and Hf and the claimed fluorine. The cation elements as taught by Dolan read on the claimed component (A) to (D). In addition, Even though Dolan does not explicitly teach amount of each of the cation elements above, Dolan does teach that the ratio of cation elements and complex fluoride is at least 1:3. Since the complex fluoride of Dolan is in the amount of 5 to 500mg/m^2, the cation elements of Dolan should be in the amount of at least 1.67 mg/m^2. Based on this dry coating amount, the examiner takes a position that the corresponding concentration of the cation elements in the coating solution of Dolan would have inherently overlapped the claimed concentration ranges for components (A)-(D). Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The

selection of claimed component concentration ranges from the disclosed ranges of Dolan would have been obvious to one skilled in the art since Dolan teaches the same utilities in its disclosed component concentration ranges.

However, Dolan does not teach the claimed silane coupling agent.

Affinito teaches an anticorrosion metal surface treatment solution comprising complex fluorides such as titanium fluoride, fluorotitanic acid, fluorozirconic acid, fluorohafnic acid and mixture thereof, used in combination with an aminosilane in an amount of about 0.2wt% to about 3wt%(abstract, col. 3 lines 41-44 and 63-66).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated about 0.2wt% to about 3wt% of aminosilane as taught by Affinito into the coating solution of Dolan since Affinito teaches that solutions comprising both an aminosilane and a fluorine containing compound not only provide good corrosion protection, but also provide good polymer adhesion(col. 2 lines 55-58).

In addition, the amount of aminosilane as taught by Dolan in view of Affinito, which reads on the claimed silane coupling agent, overlap the claimed amount of silane coupling agent. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed silane coupling agent concentration range from the disclosed range of Dolan in view of Affinito would have been obvious to one skilled in the art since Dolan in view of Affinito teach the same utilities in their disclosed silane coupling agent concentration range.

6. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dolan US 5,449,414(Dolan) in view of Affinito US 6,203,854 B1(Affinito), and further in view of Ries et al. US 3,682,713(Ries).

The teachings of Dolan in view of Affinito are discussed in paragraph 5 above. However, Dolan in view of Affinito do not explicitly teach the claimed accelerator as recited in claims 3 and 6.

Ries teaches a substantially phosphate free coating composition comprising complex fluorides of Ti and/or Zr(col. 2 lines 23-33) and water soluble salts of Zn and or Co(col. 3 lines 12-20). The coating composition of Ries further contains 0.5-30g/l of accelerators such as nitrates, chlorates, bromates, hydrogen peroxide and nitro group-containing compounds(col. 2 line 62 – col. 3 line 11).

Regarding claims 3 and 6, it would have been obvious to one of ordinary skill in the art to have incorporated 0.5-30g/l of accelerators, such as nitrates, chlorates, bromates, hydrogen peroxide and nitro group-containing compounds, as taught by Ries into the coating solution of Dolan in view of Affinito in order to speed up the conversion coating process.

In addition, the accelerator concentration range as taught by Dolan in view of Affinito and Ries overlaps the claimed accelerator concentration range. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed accelerator concentration range from the disclosed accelerator concentration range of Dolan in view of Affinito and Ries would have been obvious to one skilled in the art

since Dolan in view of Affinito and Ries teach the same utilities in their disclosed accelerator concentration range.

Response to Arguments

7. Applicant's arguments with respect to claims 1-3 and 6 filed 27 February 2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tada et al. US 6,514,357 B1 teach a conversion coating solution comprising the claimed fluoride ions, the claimed metal ions and the claimed silane coupling agent. However, the mount of Cu is 0.1-5wt%, which is higher than claimed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LLZ

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SUPERVISORY PATENT EXAMINER
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